



GREENBLUM & BERNSTEIN, P.L.C.  
Intellectual Property Causes  
1950 Roland Clarke Place  
Reston, VA 20191  
(703) 716-1191

Attorney Docket No. P18652

In re application of : Gregory D. OLSON

Application No : 09/597,154

Filed : June 20, 2000

For : DEVICE AND METHOD FOR SUPPRESSING DSL SIGNAL ECHO INDUCED BY  
BRIDGETAP

Mail Stop Appeal Brief-Patents

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Group Art Unit : 2644

Examiner : D. Swerdlow

**Mail Stop Appeal Brief-Patents**

Commissioner for Patents

U.S. Patent and Trademark Office

Customer Service Window, Mail Stop Appeal Brief-Patents

Randolph Building

401 Dulany Street

Alexandria, VA 22314

Sir:

Transmitted herewith is a **Reply Brief under 37 CFR §41.41** in the above-captioned application.

\_\_\_ Small Entity Status of this application under 37 C.F.R. 1.9 and 1.27 has been established by a previously filed statement.

\_\_\_ A verified statement to establish small entity status under 37 C.F.R. 1.9 and 1.27 is enclosed.

\_\_\_ An Information Disclosure Statement, PTO Form 1449, and references cited.

X No additional fee is required.

The fee has been calculated as shown below:

Claims After Amendment	No. Claims Previously Paid For	Present Extra	Small Entity		Other Than A Small Entity	
			Rate	Fee	Rate	Fee
Total Claims: 25	*25	0	X25=	\$	x 50=	\$0.00
Indep. Claims: 4	**4	0	X100=	\$	X200=	\$0.00
Multiple Dependent Claims Presented			+180=	\$	+360=	\$0.00
Extension Fees for ___ Month(s)				\$		\$0.00
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X Any additional filing fees required under 37 C.F.R. 1.16.

X Any patent application processing fees under 37 C.F.R. 1.17, including any required extension of time fees in any concurrent or future reply requiring a petition for extension of time for its timely submission (37 C.F.R. 1.136(a)(3)).

Bruce H. Bernstein  
Reg. No. 29,027

William Pieprz  
Reg. No. 33,630



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Gregory D. OLSON

Attn: Group Art Unit: 2644

Serial No: 09/597,154

Examiner: D. Swerdlow

Filed: June 20, 2000

For: DEVICE AND METHOD FOR SUPPRESSING DSL SIGNAL ECHO  
INDUCED BY BRIDGETAP

**REPLY BRIEF UNDER 37 C.F.R. §41.41**

Commissioner for Patents  
U.S. Patent and Trademark Office  
Customer Service Window, Mail Stop Appeal Brief  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Sir :

In response to the Examiner's Answer, dated September 9, 2005, to the Appeal Brief filed June 20, 2005, Appellant submits the present Reply Brief.

Appellant maintains that each reason set forth in the Appeal Brief filed June 20, 2005 for the patentability of the pending claims is correct and again respectfully request that the decision of the Examiner to reject claims 1-25 be reversed and that the application be returned to the Examining Group for allowance.

## REMARKS

The "Grounds of Rejection" at pages 3-12 of the Examiner's Answer relies on the same references previously applied to reject the claims. It is respectfully submitted that the Appeal Brief filed June 20, 2005 has fully addressed the requirements for patentability under 35 U.S.C. §102 and 35 U.S.C. §103. Accordingly, the herein-contained remarks are supplemental to the Appeal Brief filed on June 20, 2005. In order to facilitate review of this Reply Brief, the present remarks are limited to a discussion of features of the independent claims of the present application.

### Rejection Of Claims 1 and 22 Under 35 U.S.C. §103(a) Over PETT In View Of ATKINSON

#### Claim 1

Claim 1 recites, *inter alia*, features of "an adaptor connected to said bridgetap line, the adaptor including a capacitor in parallel with one of another capacitor and a diode". The rejection of claim 1 is based upon the assertion that it would be obvious to modify the bridged tap terminator of PETT to apply a diode in parallel with a capacitor. There is no proper basis for this assertion, as there is no proper motivation to apply a diode from ATKINSON to the bridged tap terminator of PETT, nor would such a combination of ATKINSON and PETT result in the above-noted feature recited in claim 1.

In this regard, there is no motivation in either of these references to take a diode as in ATKINSON and apply such a diode in parallel with a capacitor in PETT. Rather, ATKINSON is directed to a "home security system", which is

customer premises equipment. In contrast, PETT is directed to an external digital signal line transmission system. There is no general motivation to randomly mix and match teachings of various references merely because the references are related to devices connected to telephone lines. By the logic used in the rejection of claim 1, it would be obvious to provide a diode to any component or device connected to a telephone line. The use of a zener diode 235 in ATKINSON, to protect internal customer premise equipment (CPE) from high-voltage surges on telephone lines, provides no such general motivation to modify PETT, nor is any such motivation properly provided by any other cited reference.

Further, the zener diode 235 in ATKINSON is not in parallel with a capacitor. Rather, the diode 235 appears to specifically protect the transformer 252 as shown in FIG. 3A. Accordingly, even if a zener diode 235 in ATKINSON were applied to PETT, there is no teaching in either reference that the zener diode 235 of ATKINSON should be placed in parallel with a capacitor in PETT.

Accordingly, there is no proper basis for any assertion that it would be obvious to apply a diode from ATKINSON to the bridged tap terminator of PETT; nor would such a combination of ATKINSON and PETT result in the above-noted features recited in claim 1.

Claim 1 also recites, *inter alia*, features of "a communication line between a carrier and a user terminal; a bridgetap line having a first end connected to said communication line... wherein said adaptor reduces the effect of echo from said bridgetap line on a rate of data transmission to said user terminal over said

communication line". The rejection of claim 1 is based upon the assertion that PETT inherently "reduces the effect of echo from said bridgetap line on a rate of data transmission to said user terminal over said communication line". There is no proper basis for this assertion, as PETT does not necessarily reduce "the effect of echo from said bridgetap line on a rate of data transmission to said user terminal over said communication line", as would be required for these features to be inherent.

In this regard, the matching circuit 62 of the bridged tap terminator 50 in PETT is disclosed to match the impedance of the bridged tap 32. See PETT, col. 5, lines 21-31. Accordingly, the matching circuit 62 will ensure that reflections are not generated over the bridged tap 32 when a signal passes from the bridged tap 32 to the bridged tap terminator 50. In other words, the matching circuit 62 does not provide impedance matching to reduce the "effect of echo from said bridgetap line on a rate of data transmission to said user terminal *over said communication line*" (emphasis added). Rather, the matching circuit 62 matches the impedance of the bridged tap 32 to ensure that the bridged tap terminator 50 (of which the matching circuit 62 is a component) does not result in the generation of echo over the bridged tap 32 due to a mismatch between the bridged tap terminator 50 and the bridged tap 32.

In short, preventing the generation of echo from a newly introduced component (such as the bridged tap terminator 50 in PETT) is not the function of the claimed adaptor which "reduces the effect of echo from said bridgetap line on a rate of data transmission to said user terminal over said communication line".

In other words, while PETT is directed to ensuring that the bridged tap terminator 50 does not increase echo from the bridged tap terminator 50 over the bridged tap 32, the invention recited in claim 1 affirmatively "reduces the effect of echo from said bridgetap line on a rate of data transmission to said user terminal over said communication line".

Accordingly, there is no proper basis for any assertion that the above-noted combination of features recited in claim 1 are inherent in PETT.

Accordingly, the rejection of claim 1 under 35 U.S.C. §103(a) over PETT in view of ATKINSON is improper and should be reversed.

#### Claim 22

Claim 22 recites, *inter alia*, features of "changing a resonance characteristic of said bridgetap line... with an adaptor that includes a capacitor in parallel with one of another capacitor and a diode".

As noted above with respect to claim 1, there is no proper basis for the assertion that it would be obvious to apply a diode from ATKINSON to the bridged tap terminator of PETT; nor would such a combination of ATKINSON and PETT result in the above-noted features recited in claim 22.

Claim 22 also recites, *inter alia*, features of "changing a resonance characteristic of said bridgetap line to that of a bridgetap line longer than 650 feet with an adaptor that includes a capacitor in parallel with one of another capacitor and a diode". The rejection of claim 22 is based upon the assertion that the terminator disclosed by Pett adds capacitance equivalent to an additional bridged

tap length of... 1740 feet and, as such, the terminator disclosed by Pett inherently changes the capacitance of the bridged tap to that of a bridgetap line longer than 650 feet. There is no proper basis for this assertion, as PETT does not necessarily change "a resonance characteristic of said bridgetap line to that of a bridgetap line longer than 650 feet with an adaptor that includes a capacitor", as would be required for these features to be inherent.

In this regard, the Examiner is considering the teaching of only the load capacitance of the impedance matching circuit 62, i.e.,  $C_L$  in making the above-noted assertion. However, the bridged tap terminator in the cited configuration of PETT also includes additional capacitance values (i.e.,  $C_1$  and  $C_2$ ) which are being ignored by the Examiner in his determination.

The resonance characteristics of the bridgetap line according to the invention recited in claim 22 are changed to that of a longer bridgetap line by the capacitance of the capacitor recited in claim 22. However, the Examiner has not provided any reason why the bridged tap terminator 50 disclosed in PETT would inherently obtain such a result. In this regard, the capacitance value for  $C_L$  used in PETT is lower by approximately 50% than even the lower end of the range of capacitance values disclosed in the present application to achieve the increase in effective bridgetap length. Further,  $C_L$  in PETT is part of a ladder (cascaded) CR circuit that would need to be analyzed as a first order (Fig. 7) or second order (Fig. 8) highpass filter 60, combined with the load CR circuit 62, in order to determine the resultant responsive impedance characteristics.

Notwithstanding the above, the Examiner has made no attempt to consider the significance of  $C_L$  in the context of PETT. Rather, the Examiner's Answer asserts that  $C_L$  would have an effect in isolation, without regard to the remaining elements of PETT which are used to achieve the effects desired by PETT, and without regard to the fact that  $C_L$  is lower by approximately half than the bottom of the range noted in Appellant's specification which has been found to be effective in achieving the above-noted features recited in claim 22.

The differences between the above-noted features recited in claim 22 and the teachings of PETT were discussed at pages 17-20 of the Appeal Brief, where a more complete explanation has been provided as to why the above-noted features of claim 22 are not disclosed, either explicitly or inherently, by PETT.

Accordingly, the rejection of claims 1 and 22 under 35 U.S.C. §103(a) over PETT in view of ATKINSON is improper and should be reversed.

Rejection Of Claim 24 Under 35 U.S.C. §103(a) over PETT in view of ATKINSON, and further in view of SCHMIDT et al. (U.S. Patent No. 6,389,109)

Claim 24 recites, *inter alia*, features of an "adaptor [that] includes a capacitor in parallel with one of another capacitor and a diode".

As noted above with respect to claim 1, there is no proper basis for the assertion that it would be obvious to apply a diode from ATKINSON to the bridged tap terminator of PETT; nor would such a combination of the disclosures of ATKINSON and PETT result in the above-noted features recited in claim 24.



Claim 24 also recites, *inter alia*, features of "connecting a portion of said bridgetap adjacent an end thereof with an adaptor having capacitance between approximately 0.04-2.0 mf where the adaptor includes a capacitor". The Examiner's Answer explains that the rejection of claim 24 is based upon the reasons given for the rejections of claims 1, 2, 14 and 22. In this regard, the rejection of claim 24 is thus based upon the assertion that the above-noted range recited in claim 24 is a mere "design choice (See page 15, last line, of the Examiner's Answer). There is no proper basis for this assertion, as there is no basis for the assertion that the beneficial results of using a capacitance in Appellant's recited range would be obtained outside of the recited range.

In this regard, modifying the value of the capacitor  $C_L$  in PETT would destroy the intention of PETT to match the capacitance of the bridged tap. In particular, modification of the value  $C_L$  to fall within this range would appear to destroy the intent of PETT to have the load matching circuit 62 match the impedance of the bridged tap 32. Accordingly there is no motivation to modify the capacitor of PETT with the teachings of any other reference to change the capacitance value of  $C_L$ . Thus, the combination of PETT in view of ATKINSON, and further in view of SCHMIDT, does not disclose, suggest or render obvious an "adaptor having capacitance between approximately 0.04-2.0 mf" as recited in claim 24.

The range which is recited as a feature of the invention in claim 24 is not merely a "design choice" as asserted by the Examiner. Rather, Appellant's present specification discloses, at page 6, lines 5-11, that if "bridgetap lines 112

and 114 are 24 gauge wire, then a capacitance of 0.050 mf is preferred... [f]or 26 gauge wire, a capacitance of 0.068 mf is preferred". Accordingly, a preferred value of capacitance for an adaptor may depend upon the numerical gauge of the wire used in a bridgetap line. Further, Appellant's specification discloses, at page 2, lines 17-19, that "[b]ased on the resonance characteristics of standard telephone lines, signal degradation will define a generally bell shaped curve between 250-650 feet, with maximum losses between 300 and 500 feet". Accordingly, the range recited in claim 24 is a range that includes effective values to "change the resonance characteristics of the bridgetap 110 from a length of X feet to a length of at least X + 300 feet, and preferably to X + 400 feet" as set forth in Appellant's specification at page 6, lines 5-11.

In other words, there is no basis to the Examiner's assertion that Appellant's recited range is merely a "design choice". Further, there is no basis for the assertion that PETT or any other reference discloses the above-noted features of claim 24. Rather, the capacitor in PETT which is relied-upon by the Examiner has a value approximately one half of the lower end of Appellant's claimed range. In this regard, the method recited in claim 24 may be applied to a bridgetap for which a user of the recited method has no choice in the design, such that the method would not apply if the bridgetap does not extend within the approximate range recited in claim 24.

Accordingly, the approximate range of adaptor capacitance recited in claim 24 is not merely a "design choice", and the Examiner's assertion is made merely to justify the failure of PETT or any other reference to disclose an adaptor

capacitance within the approximate recited range. In any case, even in considering the capacitance value of  $C_L$  disclosed in PETT, which is approximately one half the lowest value of Appellant's recited range, the Examiner is improperly ignoring the additional effects of the additional capacitors disclosed in PETT, so as to consider an individual feature of PETT in isolation from other features which do not support his rejection.

Accordingly, the rejection of claim 24 under 35 U.S.C. §103(a) over PETT in view of ATKINSON, and further in view of SCHMIDT is improper and should be reversed.

Rejection Of Claim 14 under 35 U.S.C. §103(a) over PETT in view of ATKINSON, and further in view of SCHMIDT, and further in view of MARTIN, and further in view of CHARLES

Claim 14 recites, *inter alia*, features of an "adaptor including a capacitor in parallel with one of another capacitor and a diode".

As noted above with respect to claim 1, there is no proper basis for the assertion that it would be obvious to apply a diode from ATKINSON to the bridged tap terminator of PETT; nor would such a combination of ATKINSON and PETT result in the above-noted features recited in claim 14.

Claim 14 also recites, *inter alia*, features of "an adaptor connected adjacent to a second end of said bridgetap line, said adaptor having a capacitance of 0.04-2.0 mF". As noted above with respect to claim 24, there is no basis to the Examiner's assertion that Appellant's recited range is merely a "design choice". Further, there is no basis for the assertion that PETT or any

other reference discloses the above-noted features of claim 24. Rather, the capacitor in PETT which is relied-upon by the Examiner has a value approximately one half of the lower end of Appellant's claimed range.

Accordingly, the approximate range of adaptor capacitance recited in claim 24 is not merely a "design choice", and PETT and each other reference applied in the outstanding Official Action fails to disclose an adaptor capacitance within the approximate recited range. In any case, even in considering the capacitance value of  $C_L$  disclosed in PETT, which is approximately one half the lowest value of Appellant's recited range, the Examiner is improperly ignoring the additional effects of the additional capacitors disclosed in PETT, so as to consider an individual feature of PETT in isolation from other features which (also) do not support his rejection. Moreover, modification of the capacitance value of  $C_L$  disclosed in PETT would destroy the intent of PETT to have the load matching circuit 62 match the impedance of the bridged tap 32.

Claim 14 further recites, *inter alia*, features of "said adaptor reduces the effect of echo from said bridgetap line on a rate of data transmission to said user terminal over said communication line". As noted above with respect to claim 1, there is no proper basis for the assertion that these features are inherent in PETT, as PETT does not necessarily reduce "the effect of echo from said bridgetap line on a rate of data transmission to said user terminal over said communication line", as would be required for these features to be inherent. Accordingly, there is no proper basis for any assertion that the above-noted combination of features recited in claim 1 are inherent in PETT.

Accordingly, the rejection of claim 14 under 35 U.S.C. §103(a) over PETT in view of ATKINSON, and further in view of SCHMIDT, and further in view of MARTIN, and further in view of CHARLES, is improper and should be reversed.

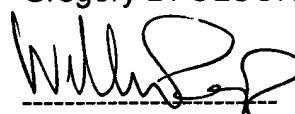
**CONCLUSION**

As noted previously, the above remarks are limited to a discussion of features of the independent claims of the present application. In this regard, separate arguments were set forth for the patentability of various of the dependent claims in the Appeal Brief filed on June 20, 2005, and each of the reasons for allowability of both independent claims and dependent claims, as set forth in the Appeal Brief filed on June 20, 2005, is correct.

Accordingly, each and every pending claim of the present application meets the requirements for patentability under 35 U.S.C. §103, and the present application and each pending claim thereof are allowable over the prior art of record.

Should there be any questions, any representative of the U.S. Patent and Trademark Office is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
Gregory D. OLSON

  
\_\_\_\_\_  
Bruce H. Bernstein  
Reg. No. 29,027

William Pieprz  
Reg. No. 33,630

November 4, 2005  
GREENBLUM & BERNSTEIN, P.L.C.  
1950 Roland Clarke Place  
Reston, VA 20191  
(703) 716-1191